

A REVISION OF THE TYPE MATERIAL OF SOME  
SPECIES OF *HYPOLOBOCERA* AND *PTYCHOPHALLUS*  
(CRUSTACEA: DECAPODA: PSEUDOTHELPHUSIDAE)  
IN THE NATIONAL MUSEUM OF NATURAL HISTORY,  
WASHINGTON, D.C., WITH DESCRIPTIONS OF A  
NEW SPECIES AND A NEW SUBSPECIES

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*Abstract.*—The descriptions of a number of species of freshwater crabs from Panama and Colombia held in the USNM are revised. These are *Hypolobocera andagoensis* (Pretzmann 1965), *H. beieri* Pretzmann, 1968, *H. canaensis* Pretzmann, 1968, *H. martelathami* (Pretzmann 1965), and *H. smalleyi* Pretzmann, 1968, and three species of *Ptychophallus* from Panama, *P. cocleensis* Pretzmann, 1965, *P. goldmanni* Pretzmann, 1965, and *P. lavallensis* Pretzmann, 1978. The present work provides illustrations of the first gonopods of the above species and corrects several inaccuracies in their descriptions and those of *H. chocoensis* Rodríguez, 1980, and *P. colombianus* (Rathbun 1893). The collections included a new species, *Ptychophallus micracanthus*, and a new subspecies, *Hypolobocera bouvieri rotundilobata*, which also are described.

Due to the scarcity of reliable taxonomic characters in the carapace and appendages of the Pseudothelphusidae, the systematics of this family of neotropical freshwater crabs is based almost exclusively on the morphology of the male first gonopods. For this reason, the taxonomic status of species described without an adequate illustration of these appendages is uncertain (Rodríguez 1982). This is the case with three lots of crabs obtained by E. A. Goldman near the Panama Canal in 1912, and by Marte Latham in Colombia in 1957 and 1962, from which Pretzmann (1965, 1968) described five new species of *Hypolobocera*. Unfortunately illustrations of the first gonopods were not included with the original descriptions, and a latter work (Pretzmann 1972) provided only photographs in which morphological details are not discernible. Descriptions of the first gonopods were not included for the species of *Ptychophallus* from Panama obtained by several collectors, and

described by Pretzmann in 1965, 1978, and 1980. The present work provides illustrations of the gonopods of the holotypes and other materials of these species in the collections of the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM), and corrects several inaccuracies in the descriptions of these taxa.

A new species of *Ptychophallus* and a new subspecies of *Hypolobocera bouvieri* were discovered among the materials in these collections. Abbreviations used are cb. for carapace breadth, and cl. for carapace length.

Pseudothelphusidae Ortmann, 1893  
Genus *Hypolobocera* Ortmann, 1897  
*Hypolobocera andagoensis*  
(Pretzmann, 1965)

Fig. 1A-C

*Strengeria (Strengeria) andagoensis* Pretzmann, 1965:6.

*Hypolobocera (Hypolobocera) andagoen-*

*sis.*—Pretzmann, 1971:17; 1972:51, figs. 170–172.

*Hypolobocera andagoensis.*—Rodríguez, 1982:67, figs. 21c, e.—von Prahl, 1988:183.

*Material.*—Colombia: Andagoya, Chocó, May 1957, leg. Marte Latham, No. 996, 1 male holotype, cl. 19.2 mm, cb. 31.6 mm (USNM 106405).—Colombia: no data, leg. Marte Latham, 1957, 15 males, largest cl. 21.3 mm, cb. 35.8 mm, smallest cl. 11.9 mm, cb. 18.2 mm, 2 females, cl. 17.6 and 21.0 mm, cb. 29.0 and 35.0 mm (USNM 106407).—Colombia: no data, leg. Marte Latham, 23 males, 28 females (USNM 106409).

*Diagnosis.*—First gonopod with caudal ridge long, straight; lateral lobe prominent, square, faintly crenulated; apex small, rounded, strangled. Endognath of first maxilliped strongly reduced, approximately 0.25 length of ischium of endognath.

*Remarks.*—In his original description Pretzmann (1965) designated the male (cb. = 31.6 mm) specimen in lot USNM 106405 as holotype, but later (Pretzmann 1972) stated the number of the holotype to be USNM 106407. In the same work 14 males and two females in lot “106405” (presumably 106407) were designated as paratypes and that author incorrectly stated that the two lots were from the same locality.

Pretzmann (1972) illustrated the whole animal (figs. 170, 171; the negatives were inverted so that the animal appears left handed), and a first gonopod which had been removed from the animal (figs. 311, 312). This appendage, however, does not belong to the holotype (USNM 106405) since this specimen still had the first gonopods attached until the present author removed them. The first gonopod of the original holotype of *H. andagoensis* (USNM 106405) is illustrated in figs. 1A–C.

*Hypolobocera beieri* Pretzmann, 1968  
Fig. 2D

*Hypolobocera (Hypolobocera) bouvieri beieri* Pretzmann, 1968:9; 1971:17; 1972:46, figs. 176–181, 308, 309.

*Hypolobocera beieri.*—Rodríguez, 1982:46, figs. 19a, i, 20b, g, 24 a–d.—von Prahl, 1988:172, fig 2.

*Hypolobocera (Hypolobocera) monticola steindachneri.*—Pretzmann, 1972:46 (part).

*Material.*—Colombia: Bitaco, Valle del Cauca, Andes Occidentales, May 1957, leg. Marte Latham, 1 male holotype, cl. 22.8 mm, cb. 40.6 mm (USNM 106410).—Same, 2 male paratypes, cl. 18.9 and 17.0 mm, cb. 33.5 and 27.2 mm (USNM 128123 ex 106410).—Mountainous area of upper San Juan River, Chocó jungle, Department of Chocó, nearest village Playa de Oro, 28 Mar 1962, leg. Marte Latham, 3 males, cl. 46.2, 32.2 and 31.5 mm, cb. 68.4, 49.9 and 46.9 mm (USNM 240101).

*Diagnosis.*—First gonopod with caudal ridge straight, well defined; lateral lobe small, rounded, placed relatively far from apex, with conspicuous depression below; apex small, rounded, moderately strangled, with two rounded and flat papillae on distal surface. Endognath of first maxilliped strongly reduced, approximately 0.3 length of ischium of endognath.

*Remarks.*—Pretzmann (1972) reassigned the paratypes of this species to *Hypolobocera monticola steindachneri*, but characters of the gonopods and carapace clearly place these paratypes in *H. beieri*.

*Hypolobocera bouvieri rotundilobata*,  
new subspecies  
Fig. 2A–C

*Material.*—Colombia: Mountains of upper San Juan River, Chocó jungle, Department of Chocó, nearest village Playa de Oro, 28 Mar 1962, leg. Marte Latham, 1 male holotype, cl. 46.2 mm, cb. 68.4 mm (USNM 240103).—Same data, 5 male paratypes, largest cl. 32.2 and 31.5 mm, cb. 49.9 and 46.9 mm (USNM 240104).

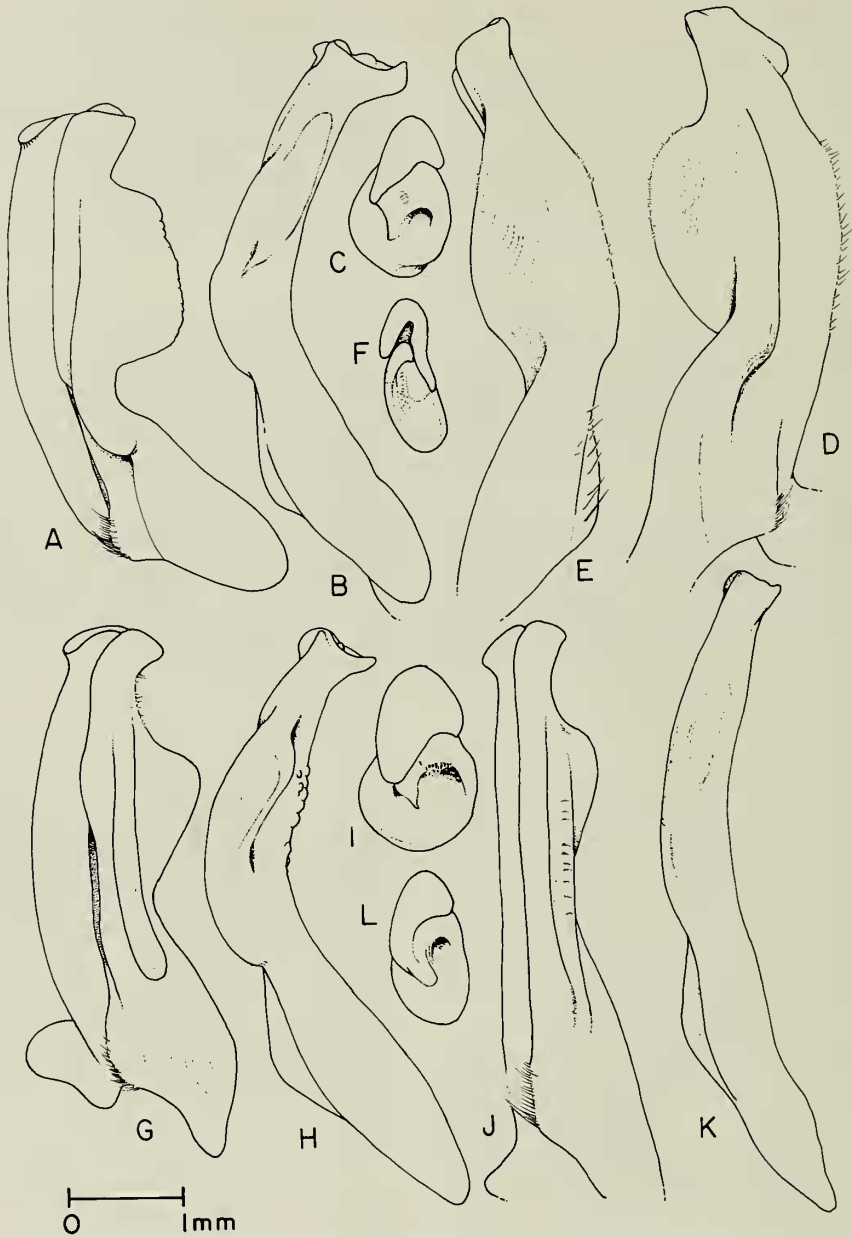


Fig. 1. A-C, *Hypolobocera andagoensis* (Pretzmann), holotype, USNM 106405, left gonopod; D-F, *Hypolobocera martelathami* (Pretzmann), holotype, USNM 106408, right gonopod; G-I, *Hypolobocera smalleyi* Pretzmann, holotype, USNM 54042, left gonopod; J-N, *Hypolobocera canaensis* Pretzmann, holotype, USNM 54039, left gonopod. A, D, G, J, caudal view; B, E, H, K, lateral view; C, F, I, L, apex, distal view.

*Diagnosis.*—Caudal ridge of first gonopod strong, with transverse wrinkles; lateral lobe small, semicircular, covered by minute pores and scattered short setae, without

crenulations over distal margin; apex funnel-form, subtriangular in distal view. Endognath of first maxilliped reduced, approximately 0.4 length of ischium of

endognath. Fixed finger of chelipeds without conspicuous tubercle at its base. Upper margin of front advanced, angled, marked by conspicuous row of coalescent papillae.

*Description* (based on holotype and 5 male paratypes).—Carapace relatively narrow (cb/cl = 1.48–1.55). Cervical grooves sinuous, deep, narrow, attaining margins of carapace. Postfrontal lobes small, rounded, well marked; median grooves not deeply impressed between lobes, but making deep incision on upper margin of front; this margin advanced, marked by conspicuous row of coalescent papillae and strongly bilobed in dorsal view; lower orbital margin strongly bent upward in holotype (probably a malformation). Exognath of third maxilliped 0.38–0.40 length of ischium of endognath. Cheliped without a large tubercle over base of fixed finger, but with scattered papillae over palm and merus, particularly on inner surface; fingers tinged reddish brown. First gonopod slender, with small semicircular lateral lobe, covered by minute pores and scattered short setae; strong caudal rib with transverse wrinkles; apex funnel-form, subtriangular in distal view.

*Remarks.*—*Hypolobocera bouvieri* is widely distributed over the Cordilleras of northern South America, with four subspecies: *H. bouvieri angulata* in the Sierra of Santa Marta, Sierra of Perijá and the Venezuelan Andes; *H. bouvieri bouvieri* and *H. bouvieri stenolobata* in the Eastern Cordillera of Colombia; and *H. bouvieri monticola* on the slopes of the Western Cordillera which descend to the Cauca valley. *H. bouvieri rotundilobata* is the only subspecies so far recorded from the Pacific slopes of the Andes. The type locality, close to the town of Playa del Oro (5°20'N, 76°23'W), is near the headwaters of the San Juan River, where the areas of distribution of *H. andagoensis*, *H. chocoensis* and *H. malaguena* von Prah, 1988 overlap. Although the San Juan River runs parallel, and next to, the Cauca River, where *H. bouvieri monticola* occurs, these two river basins are separated by the water

divide of the Western Cordillera of Colombia.

*Hypolobocera bouvieri rotundilobata* can be clearly distinguished from the other subspecies by the semicircular lateral lobe of its first gonopod. In addition, the new subspecies differs from *H. b. bouvieri* and *H. b. monticola* in the absence of a large tubercle at the base of the fixed fingers of chelipeds; and from *H. b. bouvieri*, *H. b. angulata*, and *H. b. stenolobata* in the absence of crenulations over the distal margin of the lateral lobe. The tuberculation of the upper border of the front in the new subspecies somewhat resembles that of *H. b. angulata* and *H. b. stenolobata*, but it is clearly different from that of *H. b. bouvieri* and *H. b. monticola*.

*Etymology.*—The subspecific name is from the Latin “rotundus,” rounded, and “lobatus,” lobed, a reference to the shape of the lateral lobe of gonopod.

*Hypolobocera canaensis* Pretzmann, 1968  
Fig. 1J–L

*Hypolobocera (Hypolobocera) canaensis* Pretzmann, 1968:3; 1971:17; 1972:47, figs. 211–213, 313–315.

*Material.*—Panama: Cana, altitude 850 m, 24 May 1912, leg. E. A. Goldman (U.S. Biological Survey donation), 1 male holotype, cl. 32.6 mm, cb. 51.2 mm (USNM 54039).—Cana, altitude 760 m, 21 May 1912, leg. E. A. Goldman (U.S. Biological Survey donation), 1 immature female paratype (fragmented) (USNM 54036).—Cana, Setiganti River, altitude 610 m, 24 Mar 1912, leg. E. A. Goldman (U.S. Biological Survey donation), 1 immature female paratype, cl. 45.7 mm, cb. 72.8 mm (USNM 54037).—Cana, altitude 760 m, 1 Jun 1912, leg. E. A. Goldman (U.S. Biological Survey donation), 1 male with broken carapace, cl. 34.2 mm, cb. 53.8 mm (USNM 54038).

*Diagnosis.*—First gonopod slender, slightly arched; caudal ridge straight, long, narrow; lateral lobe long, narrow, more expanded distally; apex funnel-form, elliptic

in distal view, with 1 flat rounded papilla on distal surface. Endognath of first maxilliped strongly reduced, approximately 0.3 length of ischium of endognath.

*Remarks.*—It is doubtful whether the two paratype specimens listed by Pretzmann (1972) belong in this species since both are immature females collected at lower altitudes on different days. There are only fragments of the carapace and some pereopods of one of them (USNM 54036). For details of the type locality Cana see below under *Ptychophallus goldmanni*.

*Hypolobocera chocoensis* Rodríguez, 1980

*Hypolobocera (Hypolobocera) dubia.*—Pretzmann, 1972:48, figs. 224–226, 230–232, 236, 237 (not *Pseudothelphusa dubia* Colosi, 1920).

*Hypolobocera chocoensis* Rodríguez, 1980: 891; 1982:59, figs. 19f, q, 21b, d, 31 a–d.

*Material.*—Colombia: Mountains of upper San Juan River, Chocó jungle, Department of Chocó, nearest village Playa de Oro, 28 Mar 1962, leg. Marte Latham, 10 males, the largest cl. 22.8 mm, cb. 36.7 mm, 26 females, the largest cl. 23.8 mm, cb. 39.7 mm (USNM 240102).

*Diagnosis.*—First gonopod strongly constricted below lateral lobe, with caudal ridge long, irregular; lateral lobe wide proximally, narrow distally; apex funnel shaped, expanded, rounded in distal view, with two flat, wide papillae on distal surface and small subtriangular spine on mesial side. Endognath of first maxilliped strongly reduced, approximately 0.2 length of ischium of endognath.

*Remarks.*—The following characters should be added to the description of the species: The regions of the carapace (Rodríguez 1982) are strongly marked; the post-frontal area is excavated. The front is well defined by a tuberculated ridge; the surface of the front is conspicuously excavated. The postorbital notch is very deep; the anterolateral border is not continuous with the

margin of this notch, but runs dorsally to it, forming a rounded lobe. The anterior portion of the carapace is covered by rough papillae, barely visible to the naked eye. The male chelipeds are strongly unequal; when fully developed the fingers of the largest chela are strongly gapping, the dactylus is recurved; the distal half of the dactylus, the tip of the fixed finger and the teeth of both fingers are brown black.

*Hypolobocera chocoensis* closely resembles *Hypolobocera malaguena* von Prael, 1988. The lateral lobe of the first gonopod of *H. malaguena* is smaller and almost rounded; the apex in lateral view is not strangled or funnel-shaped like in *H. chocoensis*. In distal view the apex is clearly triangular, not rounded, and possesses a well developed transverse mesial lobe. Other features which separate *H. malaguena* from *H. chocoensis*, include the smooth carapace with weakly marked regions and unexcavated frontal and postorbital regions, the upper border of the front which is weak toward the sides, and the anterolateral margin of the carapace which is continuous with the margin of the postorbital notch.

*Hypolobocera martelathami*

(Pretzmann, 1965)

Fig. 1D–F

*Strengeria (Strengeria) martelathani* (sic) Pretzmann, 1965:6.

*Hypolobocera (Hypolobocera) martelathami* 1971:17; 1972:50, figs. 159–161, 242–244.

*Hypolobocera martelathami.*—Rodríguez, 1982:52.—Campos & Rodríguez, 1984: 538, figs. 4c, f.

*Hypolobocera (Hypolobocera) plana orientalis* Pretzmann, 1968:2; 1971:17; 1972: 60, figs. 162–164, 214–221.

*Hypolobocera orientalis.*—Rodríguez, 1982: 52, figs. 19d, 20c, h; 26a–c.

*Material.*—Colombia: No other data, 1957, leg. Marte Latham, 1 male holotype,

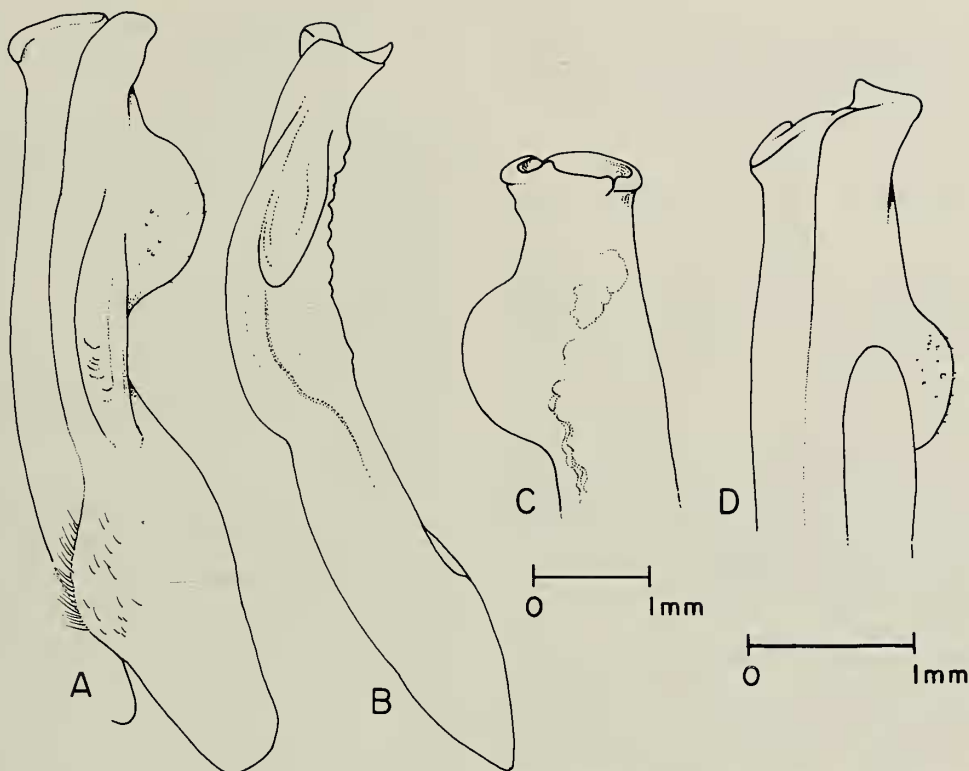


Fig. 2. A–C, *Hypolobocera bouvieri rotundilobata*, new subspecies, holotype, USNM 240103: A, left gonopod caudal view; B, same lateral view; C, same caudal view; D, *Hypolobocera beieri* Pretzmann, holotype, USNM 106410, caudal view.

cl. 16.0, cb. 25.7 mm (USNM 106408).— Colombia: No other data, 1957, leg. Marte Latham, 1 male paratype, cl. 13.0 mm, cb. 20.0 mm, 7 males, cl. 12.7, 12.7, 12.1, 12.0, 10.6, 10.2, 9.8 mm, cb. 19.8, 19.8, 18.7, 15.6, 15.6, 15.2, 14.0 mm, 2 females, cl. 16.7, 15.2 mm, cb. 26.8, 23.8 mm, 1 imm. female, cl. 12.0 mm, cb. 18.4 mm, 5 juveniles (USNM 122602).

**Diagnosis.**—First gonopod with distal half wide in caudal and mesial views, caudal ridge straight; lateral lobe large, reaching middle of first gonopod, narrow proximally, wide distally, covered with minute wrinkles, pores and scattered short setae; apex not funnel-shaped or conspicuously expanded, oblong or rectangular in distal view, 2 flat rudimentary papillae on distal surface. Endognath of first maxilliped moderately

reduced, approximately 0.55 length of ischium of endognath.

**Remarks.**—The first gonopod of *H. martelathami* is identical to that of *Hypolobocera orientalis* Pretzmann, 1968. According to Pretzmann (1968) this last species has a broader carapace, and the exognath of third maxilliped is longer, and does not possess an exorbital tooth. Actually the mean cb/cl ratio is 1.54 in both *H. martelathami* ( $n = 12$ ) and *H. orientalis* ( $n = 10$ , Rodríguez 1982); the mean ratio of the exognath to ischium of the endognath is 0.65 in *H. orientalis* (Rodríguez 1982) and 0.55 ( $n = 9$ ; spread 0.46–0.66) in *H. martelathami* (USNM 106408, USNM 122606); the post-orbital area is similar in both species. Consequently, *Hypolobocera orientalis* should be considered as a junior synonym of *Hy-*

*polobocera martelathami*, as has already been suggested by Rodríguez (1982). *Hypolobocera plana* (Smith 1870) is an incertae sedis species (Rodríguez 1982).

*Hypolobocera smalleyi* Pretzmann, 1968  
Fig. 1G-I

*Hypolobocera (Hypolobocera) smalleyi* Pretzmann, 1968:4; 1972:50, figs. 233-235, 238, 239.

*Hypolobocera smalleyi*.—Rodríguez, 1982: 60.

*Material*.—Panama: Cana, Canal Zone, altitude 760 m, 1912, leg. E. A. Goldman (U.S. Biological Survey don.), 1 male holotype, carapace broken, cl. 39.5 mm, cb. 24.7 mm (USNM 54042).

*Diagnosis*.—First gonopod with caudal ridge long, straight; lateral lobe prominent, rounded, more expanded distally, with conspicuous coalescent papillae on cephalic side; apex funnel shaped, expanded, subtriangular in distal view, with 1 acute papilla on distal surface. Endognath of first maxilliped strongly reduced, approximately 0.3 length of ischium of endognath.

Genus *Ptychophallus* Smalley, 1964  
*Ptychophallus cocleensis* Pretzmann, 1965  
Fig. 3D, E

*Ptychophallus (Ptychophallus) montanus cocleensis* Pretzmann, 1965:5.

*Ptychophallus (Ptychophallus) cocleensis*.—Pretzmann, 1971:21; 1972:88, figs. 505-507, 534, 535.

*Diagnosis*.—First gonopod with lateral projection divided in 2 lobes by deep median notch, distal lobe small, rounded close to apex, proximal lobe finger-like, directed distally; distal caudal ridge short; 2 mesial apical processes large, triangular.

*Material*.—Panama: Rio Coclé del Norte, 1951, leg. M. W. Stirling, 1 male holotype (USNM 119869).—Barro Colorado Island, Wheeler trail, 9 Jul 1969, leg. R. Foster, 1 male (USNM 230097).

*Ptychophallus colombianus*  
(Rathbun, 1893)  
Fig. 3A-C

*Pseudothelphusa colombiana* Rathbun, 1893:653, pl. 74, fig. 10, pl. 75, fig. 1; 1898:533.—Young, 1900:219.—Rathbun, 1905:302.—Coifmann, 1939:107.—Smalley, 1964:10.

*Ptychophallus (Semiptychophallus) columbianus* (sic).—Pretzmann, 1965:5.

*Ptychophallus (Semiptychophallus) columbianus* (sic) *columbianus* (sic).—Pretzmann, 1971:21; 1972:88, figs. 514, 515, 525, 526.

*Material*.—Panama: Chiriquí, David River, about lat. 8°28'N, long. 82°24'W, elevation 1220 m above sea level, very rapid stream, descending from Mount Chiriquí, Jul 1883, leg. J. A. McNeil, 2 female types (USNM 5512).—Volcán, Rio Chiriquí Viejo, 1 Mar 1924, leg. Foster, 1 male (soft shell) cl. 14.8 mm, cb. 26.8 mm (USNM 58182).—Chiriquí, Hato del Volcán, Pacific drainage, c. 3000 m altitude, 18 Jun 1960, leg. Robinson et al., 5 specimens (USNM 230098).

*Diagnosis*.—First gonopod with lateral projection narrow, with slight depression at middle; distal caudal ridge short, narrow; mesial apical process small, triangular.

*Remarks*.—Rathbun (1893) based her description on two female syntypes. Pretzmann (1972) assigned to this species the male specimen from Volcán, Panama, mentioned above (that he stated to be a female, USNM 58182), and two specimens (male and female) from Chiriquí, Panama, in the Zoologisches Museum, Berlin. Examination of the USNM material revealed that the illustration of the carapace in Pretzmann's (1972, figs. 514, 515) corresponds to one of the female paratypes (USNM 5512), and that the first gonopod illustrated in figs. 525 and 526 was taken from the specimen from Volcán (USNM 58182). Morphological details of the first gonopods are not clearly discernible from these figures and has been redrawn in the present work.

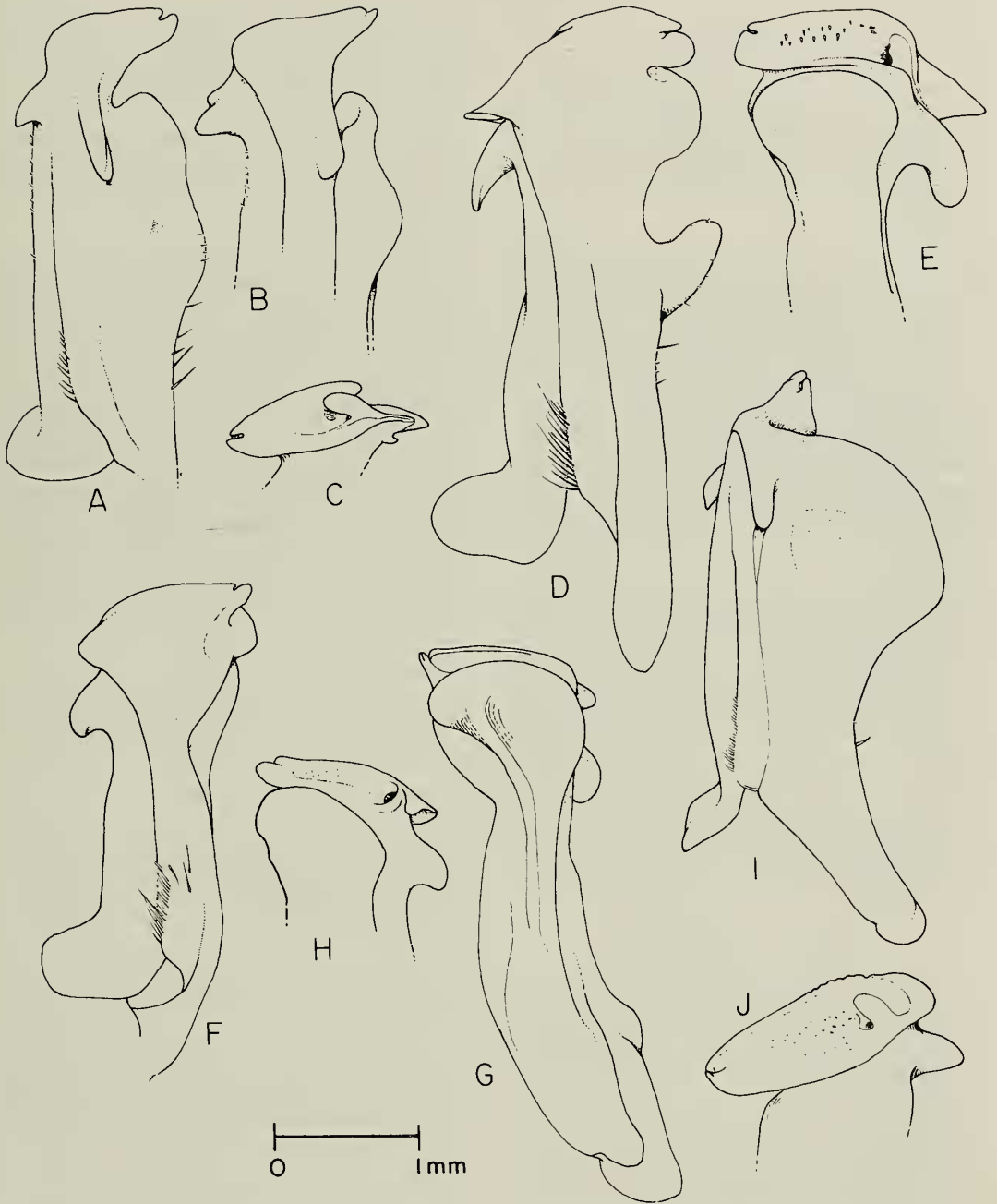


Fig. 3. A-C, *Ptychophallus colombianus* (Rathbun), USNM 58182: A, left gonopod, caudal view; B, same, meso-caudal view; C, same, apex, distal view; D, E, *Ptychophallus cocleensis* Pretzmann, holotype, USNM 119869: D, left gonopod, caudal view; E, same, apex, cephalic view; F-H, *Ptychophallus goldmanni* Pretzmann, holotype, USNM 54044: F, left gonopod, caudal view; G, same, cephalic view; H, same, apex, distal view; I, J, *Ptychophallus lavallensis* Pretzmann, USNM 240100: I, left gonopod, caudal view; J, same, apex, cephalic view.



*Ptychophallus goldmanni* Pretzmann, 1965  
Fig. 3F-H

*Ptychophallus (Microptychophallus) goldmanni* Pretzmann, 1965:5; 1971:21; 1972:90, figs. 527-529, 544-546.

*Ptychophallus goldmanni*. —Rodríguez, 1982:86.

*Material*. —Panama: Cana, 850 m, 24 May 1912, leg. E. A. Goldman, U.S. Biological Survey, 1 male holotype (USNM 54044).

*Diagnosis*. —First gonopod with lateral projection almost absent, except for small lobe located distally; caudal ridge forming distally large triangular process which extends slightly beyond apex; strong longitudinal ridge on cephalic surface ending distally in flat round lobe; mesial apical process rounded.

*Remarks*. —The name "Cana" refers to Mount Cana, altitude 1615 m, 7°48'N, 77°32'W, in Darien Province, Panama. The locality is situated in the northern outskirts of the Serranía del Baudo. The area is drained by the Balsas River which empties into a southern extension of the Gulf of San Miguel. In this mountain, E. A. Goldman also collected *Hypolobocera canaensis* and *H. smalleyi* (see above) at altitudes between 610 and 850 m.

*Ptychophallus lavallensis*  
Pretzmann, 1978  
Fig. 3I-J

*Ptychophallus (Ptychophallus) exillipes lavallensis* Pretzmann, 1978:1; 1980:651-666.

*Material*. —Panama: Coclé, headwaters of Rio Indio, N of La Mision, above El Valle, where 3 springs begin stream, c. 700 m altitude, 14 Sep 1962, leg. Loftein and Kosan, 3 males, cl. 21.7, 13.7 and 12.3 mm, cb. 37.0, 21.9 and 19.2 mm (USNM 240100). —El Aguacate, 22 Feb 1973, leg. A. Smalley, 1 male, cl. 23.4 mm, cb. 39.8 mm (USNM 184338). —Same data, 1 male, cl. 23.5, cb. 29.9 mm (USNM 184339).

*Diagnosis*. —First gonopod with lateral projection very wide, simple, its proximal margin transverse and slightly concave, its distal margin convex, both with minute setae; distal caudal ridge short, weak; apex strongly bent toward cephalic side, making contact with cephalic surface, field of spines directed laterally.

*Description*. —Cervical grooves recurved backward, narrow and shallow; do not reach margins of carapace; anterolateral margins with shallow postfrontal notch, rest of border entire. Postfrontal lobes wide, delimited anteriorly by transverse depression; median groove narrow, deep, making deep incision on upper margin of front. Surface of carapace between postfrontal lobes and front flat, horizontal, only slightly inclined downward. Upper margin of front slightly convex in dorsal view, thin, well marked, with few small tubercles; lower margin thin, moderately sinuous; front between upper and lower margin high, vertical.

Exognath of third maxilliped 0.68 length of ischium of endognath. Palm of largest cheliped moderately swollen, lower and upper margins convex; fingers with rows of black points on external surfaces. Lateral lobe of first gonopod very wide, simple; proximal margin transverse and slightly concave, distal margin convex; apex strongly bent toward cephalic side, with field of spines directed laterally; distal caudal ridge short, weak; margin of lateral lobe only have minute setae.

*Remarks*. —This species was only briefly diagnosed by Pretzmann (1978, 1980) and no illustration of the first gonopod was published. The description given above, which supplement Pretzmann's short description, is based on the specimens from Rio Indio and El Aguacate, Panama, recorded above. The Rio Indio runs parallel to, and approximately 30 km from, the valley of Rio Coclé, where the type locality of the species is found.

The first gonopod of *P. lavallensis* has a wide undivided lobe, like *P. exillipes* (Rath-

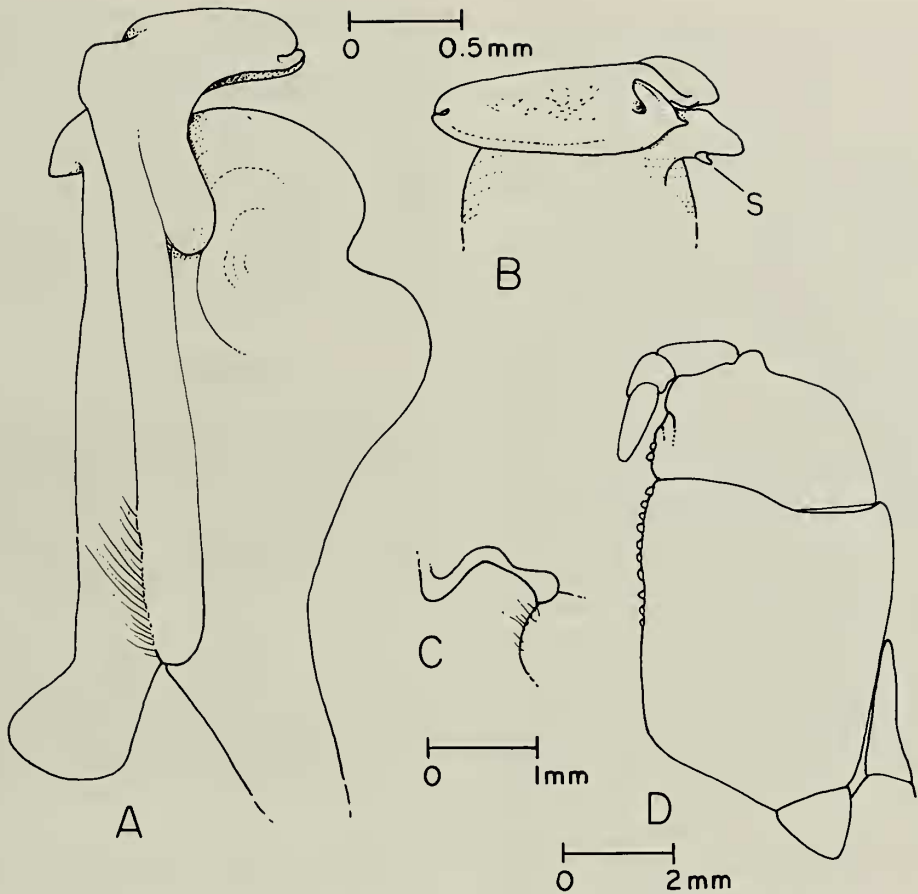


Fig. 4. *Ptychophallus micracanthus*, new species, holotype, USNM 240106: A, left gonopod, caudal view; B, same, apex, cephalic view; C, opening of left efferent channel; D, third maxilliped; s, cephalic spine.

bun 1898), but it has a different shape and lacks the long setae; the apex is relatively smaller, more strongly bent toward the cephalic side, making contact with the cephalic surface of the appendage; the distal caudal ridge is weaker, and relatively smaller.

*Ptychophallus micracanthus*, new species  
Fig. 4A–D

*Material*.—Panama: Pacific drainage, 1971, leg. L. G. Abele, 1 male holotype, cl. 24.6 mm, cb. 42.4 mm (USNM 240106).—Same data, 1 female paratype, 36 juveniles (USNM 240107).—Same data, 4 males, 2

females, 22 juveniles (USNM 240108).—San Blas, tributary to Rio Carti Grande at trail NW from Nuragandi, 5 Mar 1985, leg. R. W. Bouchard, 9 juveniles (USNM 240105).—San Blas, Quebrada Pingandi at Llando-Carti road, 4 Mar 1985, leg. R. W. Bouchard, 3 males (USNM 240110).—San Blas, Nuragandi off Llando-Carti road, 1 Mar 1985, leg. R. W. Bouchard, 1 juvenile male (USNM 240111).—Tributary to Pacora River, creek by road about 8 miles N of Cerro Azul, 27 Aug 1962, leg. Loftein and Kosan, 3 males, 1 female, 3 juveniles (USNM 240109).

*Diagnosis*.—First gonopod with large lateral projection divided in 2 subequal round-

ed lobes by median notch, margins with minute setae; distal caudal ridge short, strong; mesial apical process small, triangular, with conspicuous spine on cephalic surface; apex strongly bent toward cephalic side, with field of spines directed toward latero-cephalic side.

*Description of holotype.*—Cervical grooves recurved backward, narrow and shallow, not reaching margins of carapace; anterolateral margins with shallow postorbital notch, rest of borders entire. Postfrontal lobes wide, delimited anteriorly by transverse depression; median groove narrow, deep, making incision on upper margin of front. Surface of carapace between postfrontal lobes and front flat, horizontal, only slightly inclined downward. Upper margin of front slightly convex in dorsal view, thin, well marked, with few small tubercles; lower margin thin, moderately sinuous; front between upper and lower margin high, vertical.

Exognath of third maxilliped 0.54 length of ischium of endognath. Palm of largest cheliped moderately swollen, with lower and upper margins convex; fingers slightly gaping, with rows of small black-brown points on external surface. First gonopod with large lateral projection divided in 2 subequal rounded lobes by median notch, margins with minute setae; distal caudal ridge short, strong; mesial apical process small, triangular, with conspicuous spine on cephalic surface; apex strongly bent toward cephalic side, with field of spines directed toward latero-cephalic side.

*Remarks.*—The first gonopod of *P. micracanthus* resembles that of *P. tumimanus* (Rathbun, 1898) in the shape of the lateral lobe, but in *P. micracanthus* it is less expanded laterally and the middle notch is deeper. This species differs from all others in the genus by the presence of a small but clearly visible spine on the mesial projection of the first gonopod.

The species is well represented in the collections of the National Museum of Natural History, but the only fully mature male is

the holotype specimen (USNM 240106). However, immature crabs are easily identifiable by means of the spine located on the mesial apical process of the gonopod which is present even in specimens with a carapace length of 10.8 and 12.5 mm.

*Etymology.*—The specific name is from the Greek “mikros,” small, and “acanthus,” spine, in reference to the spine on the mesial process of the gonopod.

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